

AMENDMENTS TO THE CLAIMS

1. (currently amended) Dosimeter for detecting high-energy neutron radiation ~~having comprising:~~
a neutron converter; and
a detection element;
~~characterized in that wherein~~ the neutron converter comprises metal atoms {7} which convert the energy of the neutrons to be detected into protons, alpha particles and other charged nuclei in a suitable energy range so that they are detectable.
2. (currently amended) Dosimeter from claim 1, wherein the metal atoms {7} of the neutron converter {3} have an atomic number of $Z > 15$, preferably $Z > 20$.
3. (currently amended) Dosimeter from claim 1-~~or~~-2, wherein the neutron converter {3} comprises titanium, chrome, vanadium, iron, copper, wolfram and/or lead atoms.
4. (currently amended) Dosimeter from ~~one of the preceding claims~~ claim 1, wherein the metal atoms {7} of the neutron converter {3} are stable in the sense of radioactivity.
5. (currently amended) Dosimeter from ~~one of the preceding claims~~ claim 1, wherein the neutron converter {3} contains metal atoms {7} with different atomic numbers.
6. (currently amended) Dosimeter from ~~one of the preceding claims~~ claim 1, wherein the neutron converter {3} comprises metal atoms {7} of alloys.

7. (currently amended) Dosimeter from ~~one of the preceding claims~~ claim 1, wherein the neutron converter (3) comprises at least two layers (3a, 3b) with metal atoms (7) of different atomic numbers.
8. (currently amended) Dosimeter from claim 1, wherein the neutron converter (3) comprises layers (3a to 3e) with metal atoms (7) where essentially only metal atoms (7a to 7e) with a specific atomic number are included in each layer
9. (currently amended) Dosimeter from ~~one of the preceding claims~~ claim 1, wherein the layers (3a to 3e) of the neutron converter (3), viewed from the side of the dosimeter (1) facing the neutron radiation, contain metal atoms (7a to 7e) with descending atomic numbers.
10. (currently amended) Dosimeter from ~~one of the preceding claims~~ claim 1, wherein at least one of the layers (3a to 3e) with metal atoms (7) is configured as metal foil, preferably as rolled metal foil, or polymer foil sputtered with metal.
11. (currently amended) Dosimeter from ~~one of the preceding claims~~ claim 1, wherein the sequence of the layers (3a to 3e) with metal atoms (7a to 7e) of different atomic numbers is matched to the energy spectrum of the neutron radiation.
12. (currently amended) Dosimeter from ~~one of the preceding claims~~ claim 1, wherein the neutron converter (3), viewed from the side of the dosimeter (1) facing the neutron radiation, has ^{6}Li atoms and/or ^{10}B atoms and/or ^{14}N atoms (9) in front of the detection element (5) – preferably arranged in a thin layer.

13. (currently amended) Dosimeter from ~~one of the preceding claims~~ claim 1, wherein at least two dosimeter elements with different metal atoms (7) for measuring the energy and/or angular distribution can be housed in a casing.
14. (currently amended) Dosimeter from ~~one of the preceding claims~~ claim 1, wherein the neutron converter (3) has a hydrogenous polymer between the metal atoms (7) and the ^{6}Li atoms and/or ^{10}B atoms and/or ^{14}N atoms (9).
15. (currently amended) Dosimeter from ~~one of the preceding claims~~ claim 1, wherein the neutron converter (3) comprises layers where the first layer (3a) facing the neutron radiation contains metal atoms, the second layer (3c) the hydrogenous polymer and the third layer (3b) ^{6}Li and/or ^{10}B and/or ^{14}N atoms (9).
16. (currently amended) Dosimeter from ~~one of the preceding claims~~ claim 1, wherein the neutron converter (3) has fields (N1, N2, N3) with different structures arranged spatially next to each other.
17. (currently amended) Dosimeter from ~~one of the preceding claims~~ claim 1, wherein a number of dosimeter elements (1a to 1h) can be arranged preferably symmetrically on the surface of a cone in order to carry out a local dosage measurement and a directional distribution measurement.
18. (currently amended) Dosimeter from ~~one of the preceding claims~~ claim 1, wherein a number of dosimeter elements can be arranged on a phantom in order to carry out a directional measurement.

19. (currently amended) Dosimeter from ~~one of the preceding claims~~ claim 1, wherein the detection element (5) comprises at least one passive element and/or at least one active element.
20. (currently amended) Dosimeter from ~~one of the preceding claims~~ claim 1, wherein the passive element comprises organic high-molecular polymer, preferably polycarbonate or cellulose nitrate (preferably C39 or macroful), and/or an inorganic crystal and/or mineral, preferably a thermoluminescent crystal, in particular LiF, and/or inorganic glasses and/or an inorganic crystal.
21. (currently amended) Dosimeter from ~~one of the preceding claims~~ claim 1, wherein the active element has a semi-conductor, preferably silicon.
22. (currently amended) Dosimeter from ~~one of the preceding claims~~ claim 1, wherein provision is made for a photon dosimeter.
23. (currently amended) Dosimeter from ~~one of the preceding claims~~ claim 1, wherein the converter layers and the detection element can be housed in a casing which has a front and back wall and side walls.
24. (currently amended) Dosimeter from ~~one of the preceding claims~~ claim 1, wherein the side walls contain borium, and/or cadmium and/or nitrogen (¹⁴N) and/or lithium atoms (⁶Li).